

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING

To:
SHINSUNG PATENT FIRM

Haecheon Bldg., 741-40, Yeoksam 1-dong, Kangnam-ku 135-924 Seoul, Republic of Korea

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year) 07 FEBRUARY 2005 (07.02.2005)

Applicant's or agent's file reference
P02EC005/PCT

IMPORTANT NOTIFICATION

International application No.

PCT/KR2002/002478

International filing date (day/month/year)

30 DECEMBER 2002 (30.12.2002)

Priority date (day/months/year)

16 OCTOBER 2002 (16.10.2002)

Applicant

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE et al

1. The applicant is hereby notified that International Preliminary Examining Authority transmits here with the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details in the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.



Name and mailing address of the IPEA/KR



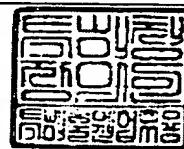
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PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|--|--|---|
| Applicant's or agent's file reference P02EC005/PCT | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/KR2002/002478 | International filing date (day/month/year) 30 DECEMBER 2002 (30.12.2002) | Priority date (day/month/year) 16 OCTOBER 2002 (16.10.2002) |
| International Patent Classification (IPC) or national classification and IPC IPC7 H01Q 21/00 | | |
| Applicant ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE et al | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of _____ sheets:

3. This report contains indications relating to the following items:
- I ☒ Basis of the report
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 11 MAY 2004 (11.05.2004) | Date of completion of this report 05 FEBRUARY 2005 (05.02.2005) |
| Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140 | Authorized officer JEON, Ki Eock Telephone No. 82-42-481-5714  |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2002/002478

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages 2/4,4/4 _____, as originally filed
pages _____, filed with the demand
pages 1/4,3/4 _____, filed with the letter of 13 Feb.2003
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION

International application No.
PCT/KR2002/002478

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-10 | YES |
| | Claims | None | NO |
| Inventive step (IS) | Claims | 2-10 | YES |
| | Claims | 1 | NO |
| Industrial applicability (IA) | Claims | 1-10 | YES |
| | Claims | None | NO |

2. Citations and explanations (Rule 70.7)

The following documents referred to this preliminary examination report :

D1=US 6292135 B1

D2=US 6236839 B1

1. Novelty and inventive step

The purpose of this invention is to linearize an adaptive array antenna system by using a feedback path for linearization of each transmission channel. For this purpose, claim 1 has trait of being comprised of array linearization means, array error compensation means.

D1 is related to adaptive array antenna system for stable directivity control and waveform equalization. And it has the first weight control means(111) and the second weight control means(114) in figure 7. Herein two weight control means aren't same to array linearization means and array error compensation means of this invention.

D2 is related to method and apparatus for calibrating a smart antenna array for optimizing the signal characteristics using a calibration vector. Also D2 has calibration processing unit(246) in figure 4. But calibration processing unit is not same to array linearization means of this invention.

However, the difference between present invention and these references is obvious to the person skilled in this art. So the subject matter of claims 1 is considered to be new but not to involve an inventive step.

2. Industrial applicability

The subject matter of claims 1-10 meet the criteria of PCT article 33(4) because it can be used in industry.